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09/815,999	03/23/2001	Stephen Christopher Kitson	30001064	2104

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Paul D. Greeley
c/o Ohlandt, Greeley Ruggiero & Perle
Suite 903
One Landmark Square
Stamford, CT 06901

EXAMINER

NGUYEN, HOAN C

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/815,999

Applicant(s)

KITSON ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 16, 18-21 and 23-35 is/are pending in the application.
- 4a) Of the above claim(s) 4-5, 8-12, 16, 18, 20, 21 and 23-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of Species B (claims 1-4, 6, 7, 16, 19 and 30-35) in Paper on 9/29/03 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

However, the feature "the inner surface 14 of the second cell wall 4 is treated to produce a locally planar or tilted planar alignment of the liquid crystal material substantially at right angles to the alignment direction on the first cell wall, whereby the cell functions in a TN or STN mode" in claims 4 and 16 does not describe in Fig. 2 of Species B. Therefore, claims 4 and 16 are withdrawn from consideration.

Hence, ONLY claims 1-3, 6, 7, 19 and 30-35 are considered.

Response to Amendment

Applicant's arguments with respect to Amended claim 1 in response filed on 5/29/03 has been considered but are moot in view of the new ground(s) of rejection. Therefore, this is Final action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 6, 7, 19, 30-31 and 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Masahiro (JP2211422).

In regard to claims 1, 19 and 33, Masahiro teaches (Figs. 1-3) a liquid crystal device comprising:

- a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
- electrodes for applying an electric field across at least some of said liquid crystal material; and
- a surface alignment structure integrated onto an inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
- an analyzer and polariser (upper and lower polarization plates 8/14) according to claim 33

wherein

- said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment.
- the geometry and spacing of the features is such as to cause the liquid crystal material to adopt a locally planar or tilted planar alignment (claim 2).

- the features are shaped and/or orientated so as to produce a substantially uniform planar or tilted planar alignment of the liquid crystal director in a single azimuthal direction (claims 6 and 30).
- the features are shaped and/or orientated so as to produce a substantially uniform planar or tilted planar alignment of the liquid crystal director in a plurality of azimuthal directions (claims 7 and 31).
- The features are at least one of different height, different shape, different tilt and different orientation in different regions of the device (claim 34),

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masahiro (JP2211422) as applied to claims 1-2, 6, 7, 19, 30-31 and 33-34 above in view of Grupp (US4923286A),

Grupp teaches (in abstract) a family of cells having a hybrid alignment is known as HAN (Hybrid Aligned Nematic), in which the inner surface of the second cell wall is treated to produce a locally homeotropic alignment of the liquid crystal material, whereby the cell functions in a hybrid aligned nematic mode, for varying transmission

and colour in dependence on the electric field providing a very flat electro-optical transmission curve.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal device as Masahiro disclosed with the inner surface of the second cell wall treated to produce a locally homeotropic alignment of the liquid crystal material, whereby the cell functions in a hybrid aligned nematic mode, for varying transmission and colour in dependence on the electric field providing a very flat electro-optical transmission curve.

Allowable Subject Matter

Claims 32 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: There is no prior art teaches said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features, which comprise posts that are tilted with respect to the normal to the plane of the first wall.

Response to Arguments

Applicant's arguments filed on May 29, 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

Masahiro fails to disclose:

- Upstanding features that are at least one of shaped and oriented to produce a desired alignment (claim 1).
- the features are shaped and/or orientated so as to produce a substantially uniform planar or tilted planar alignment of the liquid crystal director in a single azimuthal direction (claim 6).
- the features are shaped and/or orientated so as to produce a substantially uniform planar or tilted planar alignment of the liquid crystal director in a plurality of azimuthal directions (claim 7).

Examiner's responses to Applicants' ONLY arguments are follows:

Masahiro teaches:

- Upstanding features that are at least one of shaped and oriented to produce a desired alignment disclosed in Figs 1-3 and in the English translation (page 3 lines 12-18, page 4, lines 11-16) of Masahiro (claim 1).
- the features are shaped and/or orientated so as to produce a substantially uniform planar or tilted planar alignment of the liquid crystal director in a single azimuthal direction in Fig. 2 (claim 6).
- the features are shaped and/or orientated so as to produce a substantially uniform planar or tilted planar alignment of the liquid crystal director in a plurality of azimuthal directions in Fig. 3 (claim 7).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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T. Chowdhury
Primary Examiner